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MICROSCOPIC OBSERVATION OF THE CRYSTALLINE PRODUCTS DERIVED FROM THE EV (GIRARD AND ROBIC) STRAIN OF PASTEURELLA PESTIS

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MICROSCOPIC OBSERVATION OF THE CRYSTALLINE PRODUCTS DERIVED FROM THE EV (GIRARD AND ROBIC) STRAIN OF PASTEURELLA PESTIS

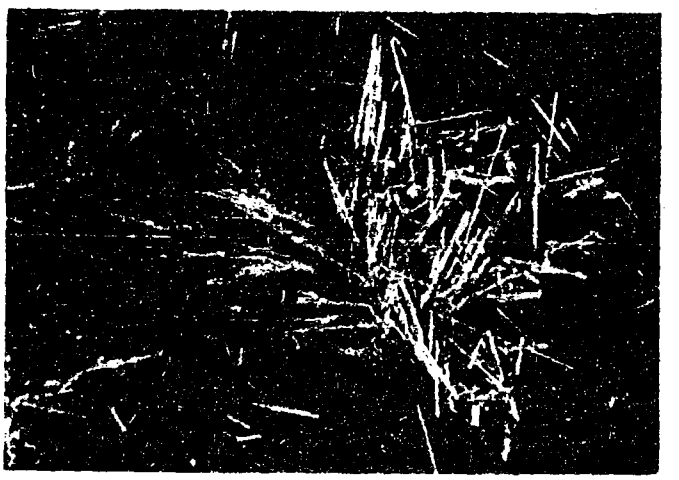
by

P. Manigault*

The formations isolated by Dr. Girard that were the subject of the preceding article were examined under the microscope in polarized light. The more compact whitish concretions can be resolved into homogenous crystalline fragments. The smaller ones always retain the appearance of fine needles, animated by Brownian movements. Although the preparations sometimes display some elements shaped like elongated tablets, very numerous bundles of slender needles, most frequently rectilinear, at times bent, are mostly observed (see Figure).

All these elements are anisotropic, birefringent. We have not found it possible, with the means at our disposal, to express this birefringency numerically. When they are examined between the analyzer and the polarizer crossed with the interposition of a red sensitive class I filter, the crystals, oriented at 45°, have a color ranging from yellowish white to straw yellow.

$$(n' - n'') e = 0.267\mu$$



Photomicrograph of EV (Pasteurella pestis) crystals in polarized light
Objective: 11; eye-piece: 6 X; photo-print reduced one-half; magnification on photographing: 30 X; analyzer and polarizer crossed to the point of extinction with a red sensitive class I filter. Photo-print by enlargement on paper: 225 X.

If their thickness is equal to their apparent diameter (20μ), the birefringency is of the nature of 0.26/20= 0.013.

When they are examined in fluorescent light (Osram HBO 200 mercury lamp, blue filter), they emit an intense greenish yellow radiation.

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* Presented at the 28 February 1959 meeting of the Biology Society (Societe de Biologie) and published in the Comptes Rendus de la Societe de Biologie, No. 158, 1959, pages 279-280.

SUMMARY

The author examined the crystalline formations derived from the Girard-Robic EV strain of Pasteurella pestis, discussed in the preceding article, under polarized light and under fluorescent light. Under polarized light, with a red sensitive class I filter, they have a color ranging from yellowish white to straw yellow. Under fluorescent light, they emit an intense greenish yellow radiation. Under the microscope, in polarized light, these preparations most frequently display elements having the appearance of bundles of slender, rectilinear needles.